

- ▶ Voltage monitoring in 3-phase mains
- ▶ Undervoltage monitoring
- ▶ Supply voltage = measured voltage
- ▶ 1 change over contact
- ▶ Width 17.5 mm
- ▶ Installation design



## Technical data

### 1. Functions

Undervoltage monitoring in 3-phase mains (each phase against the neutral wire) with fixed adjustable hysteresis.

### 2. Time range

Tripping delay: Adjustment range fixed, approx. 200ms

### 3. Indicators

Type E1YF:  
 Yellow LED ON/OFF: indication of relay output

Type E1YU:  
 Green LED L1 ON/OFF: indication of supply voltage L1-N  
 Green LED L2 ON/OFF: indication of supply voltage L2-N  
 Green LED L3 ON/OFF: indication of supply voltage L3-N  
 Yellow LED ON/OFF: indication of relay output

### 4. Mechanical design

Self-extinguishing plastic housing, IP rating IP40  
 Mounted on DIN-rail TS 35 according to EN 50022  
 Mounting position: any  
 Shockproof terminal connection according to VBG 4 (PZ1 required), IP rating IP20  
 Tightening torque: max. 1Nm  
 Terminal capacity:  
 1 x 0.5 to 2.5mm<sup>2</sup> with/without multicore cable end  
 1 x 4mm<sup>2</sup> without multicore cable end  
 2 x 0.5 to 1.5mm<sup>2</sup> with/without multicore cable end  
 2 x 2.5mm<sup>2</sup> flexible without multicore cable end

### 5. Input circuit

Supply voltage: (=measured voltage)  
 Terminals: N-L1-L2-L3  
 Rated voltage Un: see table ordering information or printing on the unit  
 Tolerance: -30% to +10% of Un  
 Rated consumption:  
 E1YF: 5VA (0,6W)  
 E1YU: 8VA (0,8W)  
 Rated frequency: AC 48 to 63Hz  
 Duty cycle: 100%  
 Reset time: 500ms  
 Hold-up time: -  
 Drop out voltage: determined by undervoltage detection (see measured circuit)  
 Overvoltage category: III (according to IEC 60664-1)  
 Rated surge voltage: 4kV

### 6. Output circuit

1 potential free change over contact  
 Rated voltage: 250V AC  
 Switching capacity: 1250VA (5A / 250V)  
 Fusing: 5A fast acting  
 Mechanical life: 20 x 10<sup>6</sup> operations  
 Electrical life: 2 x 10<sup>5</sup> operations at 1000VA resistive load

Switching frequency: max. 60/min at 100VA resistive load  
 max. 6/min at 1000VA resistive load (according to IEC 947-5-1)  
 Overvoltage category: III. (according to IEC 60664-1)  
 Rated surge voltage: 4kV

### 7. Measuring circuit

Measuring variable: AC sinus, 48 to 63Hz  
 Measuring input: (=supply voltage)  
 Terminals: N-L1-L2-L3  
 Overload capacity: determined by tolerance specified for supply voltage  
 Input resistance: -  
 Switching threshold Us: see table ordering information or printing on the unit  
 Hysteresis H: approx. 5%  
 Overvoltage category: III (according to IEC 60664-1)  
 Rated surge voltage: 4kV

### 8. Accuracy

Base accuracy: ±5% (E1YU) of rated voltage  
 Adjustment accuracy: -  
 Repetition accuracy: ≤2%  
 Voltage influence: -  
 Temperature influence: ≤1%

### 9. Ambient conditions

Ambient conditions: -25 to +55°C (according to IEC 68-1)  
 Storage temperature: -25 to +70°C  
 Transport temperature: -25 to +70°C  
 Relative humidity: 15% to 85% (according to IEC 721-3-3 class 3K3)  
 Pollution degree: 2, if built-in 3 (according to IEC 664-1)  
 Vibration resistance: 10 to 55 Hz 0.35mm (according to IEC 68-2-6)  
 Shock resistance: 15g 11ms (according to IEC 68-2-27)

### 10. Weight

Single packing: 72g  
 Packing of 10pcs: 670g per Package

## Functions

Undervoltage monitoring for 3-phase AC mains with fixed (E1YF) or variable (E1YU) threshold voltage and fixed hysteresis.

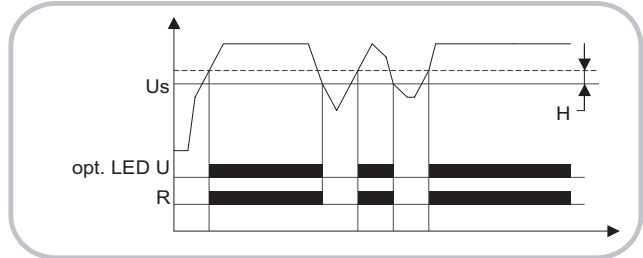
All measuring inputs (L1, L2 and L3) must be connected to phase voltage.

If single or 2-phase monitoring is required, unused input terminals (L) must be connected to mains voltage to have proper L-N voltage on the terminals L1, L2 and L3.

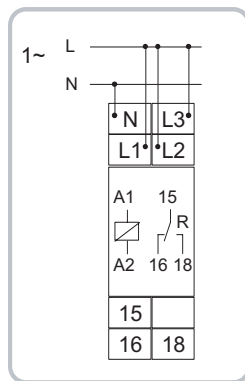
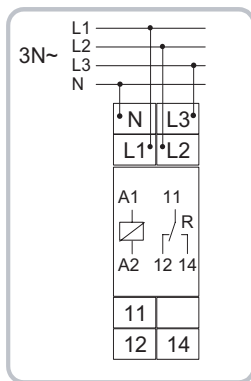
A phase failure can not be detected, if the reverse voltage coming from the load exceeds the threshold  $U_s$ .

### Undervoltage monitoring without optional time function

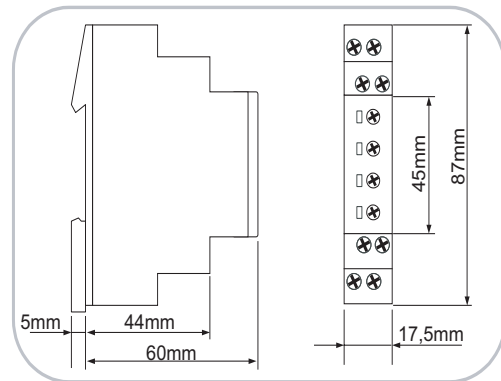
The output relay R switches into on-position (yellow LED illuminated), when the measuring voltage of all connected phases exceeds the fixed threshold by more than the fixed hysteresis. When the voltage of one of the connected phases falls below the fixed threshold, the output relay R switches into off-position again (yellow LED not illuminated).



## Connections



## Dimensions



## Ordering information

Types	Rated voltage $U_n$	Threshold voltage $U_s$	Options	LEDs	Part Nr. (PQ 1)	Part Nr. (PQ 10)
E1YF400V01 0.85	3N~400/230V	fix 195,5V (L-N)	for installations accord. to VDE 0108	Rel.	1340402	1340402A
E1YU400V01	3(N)~400/230V	160-240V (L-N)		L1, L2, L3, Rel.	1340403	